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## **Degree Attainment of Students from a Land-Grant University who Matriculated from the Mississippi Public Community College System**

Susan Johnson

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Degree attainment of students from a land-grant university who matriculated from the  
Mississippi Public Community College System

By

Susan Michele Johnson

A Dissertation  
Submitted to the Faculty of  
Mississippi State University  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy  
in Community College Leadership  
in the Department of Leadership and Foundations

Mississippi State, Mississippi

May 2014

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2014

Degree attainment of students from a land-grant university who matriculated from the  
Mississippi Public Community College System

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The purpose of this study was to investigate selected variables among community college transfer students with or without associate's degrees and native students at a 4-year university to determine the impact of the articulation and transfer process on baccalaureate attainment. More specifically, the study examined the differences in demographic characteristics, academic preparation, and graduation rates among 15 community colleges and a rural land-grant university in the state of Mississippi. There were three groups reviewed: (a) community college transfer students with associate's degrees and their graduation rate at a 4-year university, (b) community college transfer students without associate's degrees (non-degrees) and their graduation rate at the 4-year university, and (c) native university students and their rate of graduation at the 4-year university. A comparison was made among the three groups to determine if significant differences exist in the demographic characteristics and academic preparation for baccalaureate attainment.

This study utilized the causal-comparative research design. There were 5 research questions examined in this study utilizing descriptive statistics, chi-square statistical tests, and a logistic regression analysis for each of the 3 groups of students. The findings were for the demographics and academic preparation across the 3 groups that there was not a significant difference in gender or race. There was a slight tendency for all 3 groups' programs of study to be in the College of Education, College of Arts & Sciences, or College of Business. The 2 groups of transfer students seemed to be older in age. Articulation among the Mississippi Public Community College System and the rural land-grant university is functioning because the transfer students are graduating at a higher rate. From this study, analysis shows that having an associate's degree makes no difference in attaining a baccalaureate degree. As expected, the cumulative grade point average (GPA) and cumulative credit hours earned are higher for those who graduate than those who did not graduate among the three groups. The logistic regressions were statistically significant for all three groups with the strongest predictor being the cumulative overall GPA.

## DEDICATION

This dissertation is dedicated to my teachers from kindergarten all the way to my professors in graduate school who truly made a difference in my life, especially Ralph and Patsy Johnson who were not only my teachers in life but also my parents. They were first generation college graduates who instilled in me throughout my lifetime the importance of an education. At the time of this writing, I lost my father in September 2013. He was my true encourager, and he has continued in heaven above to give me the strength to accomplish completion of this dissertation. Last but not least to my precious husband John Mills who was there for me unconditionally and had such faith in me to achieve this major milestone in our lives. I thank each of you for all that you have done to make a difference in my life forever.

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## CHAPTER I

### INTRODUCTION

One of the most important key indicators of institutional quality in higher education is the college degree graduation rate. This is primarily because of the consistent research regarding the benefits of a college degree to individuals and to society (DeAngelo, Franke, Hurtado, Pryor, & Tran, 2011). College graduates are more likely to be satisfied with their jobs, and they place a greater premium on the need to feel that their work is important (Baum, Ma, & Payea, 2010). They are more likely to engage civically, with higher rates of volunteering and voting (Knox, Lindsay, & Kolb, 1993). Further, greater educational attainment is associated with both higher salaries and lower unemployment rates (U. S. Department of Labor, 2010). Based upon the United States Census Bureau American College Survey data, \$47,510 was the median annual earnings in 2009 for workers ages 25 and over with a bachelor's degree compared to \$31,906 with some college courses or an associate's degree (Ryan & Siebens, 2012). Pascarella and Terenzini (1991) described the bachelor's degree as "a passport to the American middle class" (p. 369).

Two-year colleges have long been known for their affordability, location, and open admissions policies, as well as traditionally serving as an alternative educational avenue toward completion of the first 2 years of a bachelor's degree (Anderson, Sun, & Alfonso, 2006). According to the American Association of Community Colleges (2012),

13 million students enrolled at one of the 1,132 two-year colleges in the United States. These students represented 44% of all the United States undergraduates and 43% of all first-time freshmen. With the largest population of post-secondary attendees, American community colleges have never been more central to the enterprise of higher education (Sullivan, 2006). Thus, community colleges seemingly serve as the gateway to the road toward the baccalaureate degree because of their low cost and open admission policies (Anderson et al., 2006).

Despite the value of a college degree, only 27.9% of the population in the United States has graduated from college with a bachelor's degree or more (Ryan & Siebens, 2012). Two-year colleges and universities are now being called upon to address the low graduation rates by their state legislators, and both public and private institutions feel pressure by regional accrediting associations to improve retention (DeAngelo et al., 2011). Further, a national priority has been established: President Barack Obama, in the *American Graduation Initiative*, set the goal that the United States must add 5 million more graduates to the workforce in the next 10 years to remain competitive in the global marketplace (White House Office of the Press Secretary, 2009). Community colleges are an important, if not the primary, contributor to meeting the *American Graduation Initiative* (Kotamraju, 2011).

Alba and Lavin (1981) have charged that transfer education of the 2-year colleges inadequately prepares students for 4-year schools, which results in a lower baccalaureate attainment rate for students starting in 2-year colleges compared with those who began at a 4-year college. For some students, starting at a 4-year college is not an option because of escalating tuition costs and students' family or job responsibilities (Townsend &

Wilson, 2006). Therefore, it is important for higher education leaders, faculty, researchers, and policy makers to pay heed to further developments toward the baccalaureate attainment.

### **Statement of Problem**

The transfer of credits between community colleges and 4-year institutions has historically been problematic. Students who earn credits at a community college cannot always apply all those credits toward a bachelor's degree. This causes frustration, added expense, and delay in degree attainment (Hughes & Karp, 2006).

Pascarella and Terenzini's (2005) research suggested that if students are equally matched on variables such as academic aptitude, race, ethnicity, and gender, those who start at a community college are at least 15% less likely to attain a bachelor's degree than those who start at a 4-year school. Students who transfer before earning associate's degrees are on average less successful at their senior institution. In general, the more credit hours students have when they transfer, the greater the likelihood of academic success and baccalaureate attainment (McCormick & Carroll, 1997).

The disjointed nature of the credit transfer process has as its roots the presence of two higher education systems. In many states, community colleges and universities are separate entities with their own governing boards and leadership (Hughes & Karp, 2006). Hence, the growth in the number and type of articulation agreements and transfer arrangements between community colleges and universities during the past 100 years could be described as a "work in progress" (O'Meara, Hall, & Carmichael, 2007). Access to higher education is currently at a premium in the United States due to rising tuition, a consistently shrinking percentage of higher education relative to other state expenditures,

and changes in both demographics and patterns of employment and job growth (Commission on National Investment in Higher Education, 1996; Kane, Orszag, & Gunter, 2003; Zusman, 1999). The possibility of enhancing transfer between 2-year and 4-year institutions through statewide articulation agreements is an important development to analyze and assess. Surprisingly, very little research focuses specifically on the relationship between state policy and the effectiveness of transfer between 2-year and 4-year institutions (Anderson et al., 2006).

Williams (as cited in Sykes, Schneider, & Plank, 2009) stated that the United States is falling behind other countries in college participation and other critical measures of post-secondary access and attainment. Nationally, only 27.9% of the population has graduated from college with a bachelor's degree or more based upon the United States Census Bureau American College Survey data (Ryan & Siebens, 2012).

In Mississippi, the legislature recognized that a significant number of students was underperforming and failing to graduate with the state ranking 48th in the nation in the percent of adults aged 25 to 64 who have earned bachelor's degrees or higher. In 2009, Mississippi House Bill 488 was passed to create a Graduation Task Force to study and report on the graduation rates for the public universities and community colleges. In the findings, it was noted that while Mississippi had formal policies and agreements in place, transfer and articulation appeared to have little impact. In 2010, Mississippi House Bill 1071 created the Education Achievement Council to develop benchmarks toward increasing degree attainment of Mississippi's working age population to the national average by 2025. In 2011, Mississippi House Bill 875 added an additional duty to the Education Achievement Council, building upon Mississippi House Bill 1071, to research



and develop funding formulae for community colleges and 4-year institutions based partly on educational outcomes requiring a report to the legislature in 2013.

With governmental endorsement and interest in articulation and transfer, there was a clarion call for further research to investigate institutional practices with the desired effect of increasing transfer and, most importantly, baccalaureate attainment.

### **Purpose of the Study**

The purpose of this study was to investigate selected variables among community college transfer students with or without associate's degrees and native students at a 4-year university to determine the impact of the articulation and transfer process on baccalaureate attainment. More specifically, the study examined the differences in demographic characteristics, academic preparation, and graduation rates among 15 community colleges and a rural land-grant university in the state of Mississippi. There were three groups reviewed: (a) community college transfer students with associate's degrees and their graduation rate at a 4-year university, (b) community college transfer students without associate's degrees (non-degrees) and their graduation rate at the 4-year university, and (c) native university students and their rate of graduation at the 4-year university. A comparison was made among the three groups to determine if significant differences exist in the demographic characteristics and academic preparation for baccalaureate attainment.

### **The Research Questions**

The five research questions for the study were the following:

1. What are the demographic characteristics and academic preparation of the associate's degree community college transfer students and non-degree community college transfer students having at least 60 hours who enrolled at the junior level status in fall 2006 at a rural land-grant university in Mississippi?
2. What are the demographic characteristics and academic preparation of the native students who enrolled as freshmen in fall 2004 at a rural land-grant university in Mississippi?
3. Do community college students with associate's degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?
4. Do community college students without associate's degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?
5. Do demographic characteristics and academic preparation predict graduation for the associate of arts degree, non-degree community college transfer, and native students?

### **Theoretical Framework**

The theoretical framework for this study is grounded on Tinto's interactionist theory of college student departure (Braxton, Milem, & Sullivan, 2000) and Pascarella and Terenzini's (1991) general model for assessing change. Tinto theorized that varying patterns of personal, family, and academic characteristics and skills factor into college attendance and personal goals. Satisfying and rewarding encounters with the academic

and social systems of an institution lead to student persistence. Persistence is an important condition for degree attainment (Pascarella & Terenzini, 1991). Pascarella and Terenzini (1991) suggested a “general causal model” that included both the institution’s structural characteristics and its general environment (p. 53). The researchers stated that there are five major sets of variables regarding students’ growth. Two sets involve student’s background and pre-college characteristics and the structural and organizational features of the institution. The third set of variables involves the institution’s environment with the fourth being both frequency and content of students’ interactions with the major socializing agents to be faculty and other students. The fifth set focuses on quality of effort (p. 55).

### **Definitions of Terms**

The definitions listed below were used in this study to clarify terms.

*Articulation:* Described as a formal collaborative agreement between education institutions that enables a student to complete a program of study at one institution and, using accumulated credits, attain a degree at another institution in a shorter period of time (DeMott, 1999; Menacker, 1975).

*Community college:* Defined as the “people’s college,” due to open-access admissions policies, affordable costs, and geographic locations that are within easy driving distance for most people (Floyd, Skolnik, & Walker, 2005).

*Community college transfer:* Defined as a student who takes community college classes and a behavior manifested by those who eventually matriculate at a 4-year college or university (Cohen & Brawer, 1987).

*Native university student:* Defined as a student who began post-secondary education at the 4-year institution and who has remained continuously enrolled at the same institution since the initial enrollment (Johnson, 1987).

*Graduation rate:* Defined by the National Center for Education Statistics (NCES) as the rate required for disclosure and/or reporting purposes under the Student Right-to-Know Act. This rate is calculated as the total number of completers within 150% of normal time divided by the revised adjusted (NCES, 2013). For this study, graduation rate is defined as a student who has completed a degree at the end of a time frame of 6 years excluding drop-out or stop-out students.

*Associate of Arts Degree (AA):* Defined as the universally accepted credential for programs designed to prepare students for upper-division baccalaureate study (Bender, 1990).

*Non-degree community college transfer:* Defined as a transfer student who has accumulated at least 60 hours from a community college and matriculates at a 4-year college or university.

*Program of study:* Defined by the NCES as a combination of course and related activities organized for the attainment of broad educational objectives as described by the institution (NCES, 2013).

*Rising junior:* Defined as a student who has at least 60 semesters hours earned beginning the first semester of his or her junior year at a university (Mississippi State University, 2012).

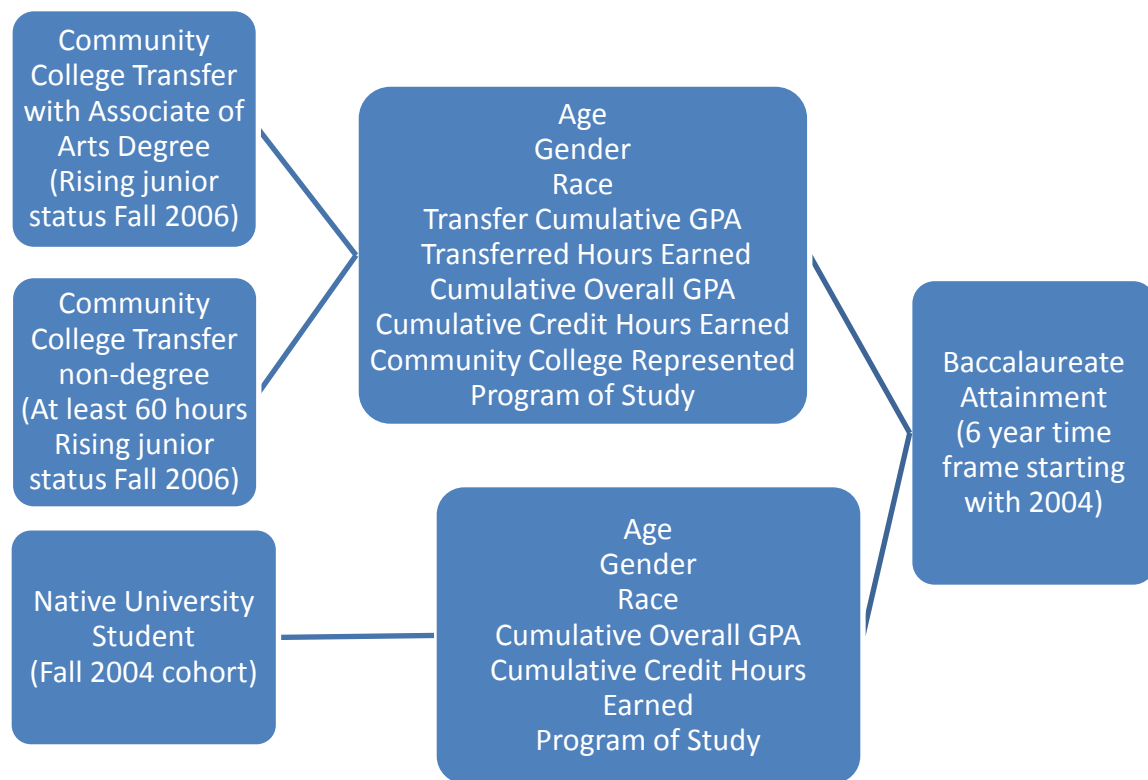
*Educational attainment*: Defined as the number of years of schooling completed or degrees earned (Pascarella & Terenzini, 2005). For this study, educational attainment refers to baccalaureate degree attainment.

*Race*: Defined by the NCES as the category used to describe groups to which individuals belong, identify, or belong in the eyes of the community. They are used to categorize U.S. citizens, resident aliens, and other eligible non-citizens. The categories for race are the following: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, International, Multiracial, and Unknown (NCES, 2013).

### **Conceptual Framework**

The purpose of this study was to investigate selected variables among community college transfer students with or without associate's degrees and native students at a 4-year university to determine the impact of the articulation and transfer process on baccalaureate attainment. Figure 1 provides a flowchart to visualize that the rate of degree attainment may result in differences between a community college transfer student with an associate's degree and his or her graduation rate at the 4-year university to a non-degree community college transfer student with at least 60 hours transfer credit and his or her graduation rate at the 4-year university compared to native university student and the rate of graduation at the 4-year university. This study included the following variables: (a) age, (b) gender, (c) race, (d) transfer cumulative grade point average (GPA), (e) transferred hours earned, (f) cumulative overall GPA, (g) cumulative credit hours earned, (h) community college, (i) program of study (major), and (j) baccalaureate attainment.

Student age, gender, race, community college, and program of study constituted student demographics characteristics. Transfer cumulative GPA, transferred hours earned, cumulative overall GPA, and cumulative credit hours earned represent factors associated with persistence toward academic preparation for baccalaureate attainment. This conceptual framework included the constructs of academic preparation theorized by Tinto to impact persistence (Braxton et al., 2000).



*Figure 1.* Conceptual Framework

## **Research Design and Methodology**

This study utilized the student records data maintained in a rural land-grant university administrative software system known as BANNER. The researcher utilized primary sources of data from a major high-level research land-grant university in the southeast. Primary data were collected for the native university student who enrolled in fall 2004 and the community college transfer student who had been awarded an associate's degree and admitted into the rural land-grant university in the fall 2006 as a rising junior along with the non-degree community college transfer student who had accumulated at least 60 hours and was admitted into the rural land-grant university in the fall 2006 as a rising junior. Data were analyzed using Statistical Packages for the Social Sciences (SPSS) version 22. Descriptive statistics were used to analyze the demographic data for research questions one and two, chi-square test of independence was used to answer research questions three and four, and logistic regression was used for research question five.

The researcher gathered data on student demographic variables for this study as well as variables for academic preparation and the dependent outcome variable of baccalaureate attainment as described in the conceptual framework. Table 1 lists the variables and descriptors that were used for this study.

Table 1

*Demographic, Independent, and Dependent Variables*

Variables	Descriptions
Demographic independent variables	
Age	Age at matriculation to the 4-year university
Gender	Male= M Female=F
Race	Other=1, 2, 4 Black or African American=3 White=5
Independent Variables (Academic Preparation)	
Transfer Cumulative GPA	0.00-4.00
Transferred Hours Earned	000.000-999.999
Cumulative Overall GPA	0.00-4.00
Cumulative Credit Hours Earned	000.000-999.999
Community College	01-15
Program of Study (Major)	4 letter code
Dependent Variable	
Baccalaureate Attainment	Yes=Y No=N

**Delimitations**

This study was confined to investigating selected variables for three groups of students, two of which pertained to Mississippi community college transfer students who: (a) had, or (b) did not have an associate's degree with an accumulation of 60 hours transfer work and matriculated at the rural land-grant university in Mississippi in fall 2006. The third group was confined to full-time first-year native university students who



were admitted in fall 2004. Hence, any generalization was limited by investigating only those community college students and native university students enrolled at the time of the study at the Mississippi rural land-grant university.

### **Significance of the Study**

With the largest population of post-secondary attendees, American community colleges have never been more central to the enterprise of higher education (Sullivan, 2006). Thus, community colleges seemingly serve as the gateway to the road toward the baccalaureate degree because of their low cost and open admission policies (Anderson et al., 2006). The disjointed nature of the credit transfer process has as its roots the presence of two higher education systems. In many states, community colleges and universities are separate entities with their own governing boards and leadership (Hughes & Karp, 2006). Access to higher education is currently at a premium in the United States due to rising tuition, a consistently shrinking percentage of higher education relative to other state expenditures, and changes in both demographics and patterns of employment and job growth (Commission on National Investment in Higher Education, 1996; Kane et al., 2003; Zusman, 1999). Thus, baccalaureate degree attainment is an important policy question for both entities of the community college system and university system.

This study contributed to research body on community college transfer students and addressed a gap in the existing literature by exploring whether there are significant differences in student demographic characteristics as well as academic measures of community college transfers who have associate's degrees compared to non-degree community college transfers who have accumulated at least 60 hours of transfer work compared to the native university student. These factors were used to identify and help

explain differences in the graduation rates of the community college transfer student and native university student. This study was undertaken to increase the level of knowledge about the impact of the articulation process among the community college system and the university system. Higher education leaders, faculty, researchers, and policy makers can potentially use the findings from this study to create conditions to obtain higher baccalaureate degree attainment among the community college transfer students and native university students.

## CHAPTER II

### REVIEW OF THE LITERATURE

There have been considerable noteworthy studies where researchers concluded that transfer education of 2-year colleges to 4-year colleges resulted in lower baccalaureate attainment rate (Ryan & Sieben, 2012; Sykes et al., 2009; Hughes & Karp, 2006; Pascarella & Terenzini, 2005; Alba & Lavin, 1981). Dougherty (1992) found that baccalaureate aspirants from the community college encounter institutional obstacles at three stages: surviving in the community college, transferring to a 4-year college, and persisting in the 4-year college. During the first stage, Dougherty notes that community college entrants dropped out considerably more than 4-year college students. A key institutional factor was the community college's weaker ability to integrate its students into the academic and social life of the institution. Tinto's theory (1975) of process of college withdrawal strongly shed light on the nature of academic and social integration. Tinto stated that dropout rises from a poor fit between an institution and its students. He argued that dropout decisions are most immediately the product of a breakdown in a commitment to staying at a given college or a commitment to securing a college degree. If the baccalaureate aspirants survived the years of community college, they faced the second stage: transferring to a 4-year college in order to pursue their degrees. An analysis of the National Longitudinal Survey of High School Class of 1972 found that of baccalaureate aspirants who survived the first 2 years of college, only 49.3% were

community college entrants compared to 96.2% of the 4-year college entrants who reached the junior year at a 4-year college. Cohen, Brawer, and Bensimon (1985) found through a nationwide survey of community college faculty that only a small number had frequent meetings with students to discuss transfer and only one-third had information on their students' transfer intentions.

With the third stage being persisting in the 4-year college, community college entrants were still at greater risk of failing to attain baccalaureate degrees than the 4-year college native students. Lower ability and weaker motivation were found to be factors in the National Longitudinal Survey of High School Class of 1972 study for community college baccalaureate aspirants to drop out of a 4-year college. Other evidence indicated that community college baccalaureate aspirants received less financial aid and 4-year colleges less often recognized their lower-division credits. Richard and Bender's (1987) study consisted of community college transfers at nine urban universities across the country. Within the study, 58% of the community college transfers reported losing credit in transferring, with 29% losing 10 or more credits. In addition, 25% reported that even when the university gave them credit for certain courses, those credits were not counted toward their majors.

While the research questions and theoretical and conceptual frameworks guided the literature review of this study, Dougherty's (1992) three stages provided context for investigation regarding the baccalaureate degree attainment process.

### **American Community College Overview**

Vaughan (2002) stated, "The American community college has strong roots in the nation's history and its commitment to expanding educational opportunity for all" (p.1).

The community college has held to its commitment; according to the American Association of Community Colleges (2012), 13 million students enrolled at one of the 1,132 two-year colleges in the United States. These students represented 44% of all the United States undergraduates and 43% of all first-time freshmen. With the largest population of post-secondary attendees, American community colleges have never been more central to the enterprise of higher education (Sullivan, 2006). Thus, community colleges seemingly serve as the gateway to the road toward the baccalaureate degree because of their low cost and open admission policies (Anderson et al., 2006).

Dassance (2011) noted that the mission of community colleges has changed significantly since the founding of Joliet College in 1901. Junior colleges were originally intended to provide a broad general education to students at the freshmen and sophomore levels to prepare them for the university. Community colleges have expanded their mission to include career, vocational programs, developmental, and a wide array of community service programs. Today's community college embraces Thomas Jefferson's belief that education should be practical as well as liberal and should serve the public good as well as individual needs (Vaughan, 2000).

### **Mississippi Community and Junior Colleges Overview**

Young and Ewing (1978) recorded the first 50 years of development of the Mississippi public junior colleges. The pivotal point of the beginning of the Mississippi public junior colleges was the passing of Senate Bill No. 251, introduced by Dr. Julius Christian Zeller in 1922. The first two agricultural high schools that began offering college courses in 1922–1923 were Pearl River County Agricultural High School in Poplarville and Hinds County Agricultural High School in Raymond. Three years later,

Holmes County Agricultural High School in Goodman and Harrison-Stone Agricultural High School in Perkinson followed. By 1929, there were 11 high schools offering college courses in the state of Mississippi. The following were referred to as the “original” junior colleges:

- Pearl River County Agricultural High School in Poplarville
- Hinds County Agricultural High School in Raymond
- Holmes County Agricultural High School in Goodman
- Harrison-Stone Agricultural High School in Perkinson
- Sunflower County Agricultural High School in Moorhead
- Kemper County Agricultural High School in Scooba
- Jones County Agricultural High School in Ellisville
- Tate County Agricultural High School in Senatobia
- Copiah-Lincoln in Wesson
- Newton County in Decatur
- Pike County in Summit (p. 4)

In 1928, another pivotal point occurred when Senator Zeller introduced another bill, Senate Bill No. 131, which created the Commission of Junior Colleges to control these junior colleges. With this action, Mississippi was noted to be the first state system of junior colleges in the United States. Also, during this session, House Bill 263 was approved, which appropriated specific funds for the agricultural high schools for this purpose.

In 1922, the population of the state of Mississippi was majority rural, and by establishing these junior colleges, a world of opportunity occurred. During this time, the

high school superintendents served as the presidents of the junior colleges. As Young and Ewing stated, “The purpose of the Mississippi junior college through the years has been to meet the needs of students and to keep an open door for all high school graduates” (pp. 7–8). Additionally, it was noted that transfer students showed evidence of passing at higher institutions in which they attended. In those years, the financial support at the local county level regarding mill authority had been the answer for the Mississippi junior college system as well as legislative appropriations.

Young and Ewing (1978) described the second decade of the Mississippi junior college system as “The Years of Struggle” due to the Great Depression (p. 19). However, by the end of the second decade, 41 counties had levied a direct tax for the junior colleges. The collaboration of being a unified state system was evident when the presidents and board of trustees established the Mississippi Junior College Literary and Athletic Association. The presidents held regular meetings, and through this organization, they gave direction for the system. The quality of the academic programs was a very important topic of discussion for the presidents. Studies of achievement of the students transferring to senior colleges and the comparison of their achievements with that of four-year students of the senior colleges were reviewed by using records of the high school junior and senior years of the junior college transfers and those of the junior and senior years of the 4-year students. As noted by Young and Ewing (1978), “A meaningful study by W.H. Sumrall of Mississippi College, showed that the junior college students were equal in achievement with the four-year students” (p. 18).

In conjunction with the quality of programs, regional accreditation was another topic that action was taken upon during this decade. When a college was regionally

accredited, transfer of credit hours to senior colleges and universities was not questioned. The regional accrediting body for Mississippi was the Southern Association of Colleges and Schools. With establishment of the Meridian Municipal Junior College in this decade, 9 of the 12 public junior colleges had received full regional accreditation. Thus, this accomplishment exemplified that junior colleges were meeting high standards of quality.

For the third decade, the Mississippi public junior colleges experienced the impact of World War II with a drop in enrollment to a low of 1,375 compared to a high of 4,074 prior to the war (Young & Ewing, 1978). Upon the end of the war and this decade, a large percentage of Mississippi's public junior college enrollment was made of veterans. With many of the returning veterans needing family housing, dormitory facilities were expanded through the Federal Public Housing Act. Needed buildings were moved to each junior college campus, which met an urgent space need for technical and vocational programs being developed for the returning veterans. During the third decade period, two major changes occurred in the Mississippi public junior colleges: vocational–technical education state appropriation by the state legislature and direct state appropriations for buildings to meet the total educational and training needs for each district. Additionally, two junior colleges in Northeast Mississippi, Itawamba Junior College and Northeast Junior College, joined the other junior colleges in 1948 after a 7-year delay due to the war. In 1949, the first public junior college for Black students was established at Coahoma County Agricultural High School. The junior college presidents questioned the adequacy of the law of 1928 that the work of the agricultural high schools was not correlated with the junior college programs. Hence, state law was revised in 1950 to



reflect the name change from “Agricultural High School and Junior College” to “Junior College” (Young & Ewing, 1978, p. 31). This was a very important change because supervisors of the supporting counties could now designate local tax levy for junior college support without it being used to support agricultural high schools. At the end of this decade, the enrollment was increasing.

Young and Ewing (1978) stated that during the fourth decade, junior colleges were maturing into fully developed 2-year college programs. The leaders of the Mississippi junior colleges had gained positive reputations not only at the state and regional levels but also at the national level by becoming active in the American Association of Junior Colleges. By this time, all 14 junior colleges had received regional accreditation by the Southern Association of Colleges and Schools. The open-door policy regarding admission to the Mississippi junior colleges continued. During this decade, the main goal of the institution was to learn its distinctive community needs and the needs of its students. Vocational–technical education was expanded during this decade along with nursing education, which became a vital part of the public junior college system through the offering of the associate’s degree in nursing as well as the first practical nursing program. By the end of this decade, eight of the public junior colleges were offering associate’s degree programs in nursing. Bus transportation also unified the districts and increased the number of students attending college.

For the fifth decade, 25 area vocational–technical training centers were constructed and equipped as the results of House Bill 215 and House Bill No. 597. Also, a major increase in vocational–technical education state and federal appropriations occurred. In the 1968 legislative session, a Division of Junior Colleges within the State

Department of Education was established from the amendment of Section 6245-08, Mississippi Code of 1942 (Young & Ewing, 1978). The Mississippi Junior College Inter-Alumni Association, a statewide organization, was organized in December 1964 with the charter being signed by Governor Paul B. Johnson in 1966. The charge was to strengthen the local district alumni organizations. By the end of the fifth decade, enrollment of Mississippi junior colleges had soared to 60,869 students. Each junior college had a local board of trustees that served as the chief authority for the college.

For the second volume of history of the Mississippi junior colleges covering 1972–2002, the Mississippi Association of Community and Junior Colleges (2007) continued telling the story of the Mississippi junior colleges. Hallmarks during this era were “unprecedented growth in student enrollment that served diverse constituencies, integrated technology into the curriculum, and advanced economic development statewide by providing industry with thousands of well-trained workers” (p. 1). To reflect the expanding roles, the title of the 2-year institution was changed to adopt the term community as being an integral and descriptive part of the name, with the exception of Jones Junior College. The 15 community and junior colleges were as follows:

- Coahoma Community College
- Copiah-Lincoln Community College
- East Central Community College
- East Mississippi Community College
- Hinds Community College
- Holmes Community College
- Itawamba Community College

- Jones County Junior College
- Meridian Community College
- Mississippi Delta Community College
- Mississippi Gulf Coast Community College
- Northeast Mississippi Community College
- Northwest Mississippi Community College
- Pearl River Community College
- Southwest Mississippi Community College

The Mississippi Association of Community and Junior Colleges (MACJC) in conjunction with the State Board for Community and Junior Colleges (SBCJC) succeeded the former Mississippi Junior College Literary and Athletic Association and Commission of Junior Colleges. Additionally, leadership at the State Board changed from Dr. George Moody, who was the first executive director, to Dr. Olon Ray, who retired in 2002 and was succeeded by Dr. Wayne Stonecypher. The first SBCJC staff consisted of only 5 people and grew to 41 under Dr. Ray's tenure. Dr. Stonecypher followed with emphasis being on "establishing a program of work, tackling such issues as the transfer of day-to-day operations of the postsecondary vocational-technical programs, vast changes from a funding formula based primarily on headcount to one based on the number of full-time-equivalent students, and the continuation of a strong articulation agreement that covered the transfer of credits from the community/junior colleges to the universities" (Mississippi Association of Community and Junior Colleges, 2007, p. 4).

During this era, more women assumed administrative leadership roles, such as Dr. Vivian Presley of Coahoma, the first female president at Coahoma Community College;

Deborah Gilbert, SBCJC's associate executive director for finance and administration; Nancy Alley, director of workforce programs; and Dr. Evelyn Webb, the associate executive director for accountability and support services. Another milestone that occurred in this era was integration among all community and junior colleges. Harris Junior College and Utica Junior College merged with Meridian in 1970 and Hinds in 1982.

At the Mississippi Association of Colleges conference in October of 1991, a major milestone occurred regarding formalizing an articulation agreement between the 15 community and junior colleges in the state of Mississippi with the eight public universities. The agreement ensured that students' community college course credits would transfer smoothly to universities within the state of Mississippi. This was an acknowledgment by the universities of the courses' quality and credibility taught at the 2-year colleges.

During 1972–2002, there was a more diverse student population with integration being promoted. Gulf Coast Community College broke new ground for integration, opening the Jefferson Davis and Jackson County campuses in September 1965. Additionally, as the community colleges' student enrollment growth increased so did the political clout of the community college presidents with the state legislature. State appropriations grew from \$7.6 million in 1970 to nearly \$174 million in 2002.

Technological and occupational education advancements were areas of great significance during this era, which even caused a change in the funding formula. A \$29.95 million bond was issued to upgrade the colleges' technological infrastructure in the mid-1990s, which was of great need to move forward curricula, training programs,

and administrative and student support services. One-stop centers for workforce were developed to assist in customized industrial training. The greatest impact on technological advancements during this era was the Internet, which sparked awareness to the Mississippi's community colleges that online learning was the way of the future. A committee named in 1997 researched "the need for a sixteenth community college to offer online courses" (Mississippi Association of Community and Junior Colleges, 2007, p. 10). From the committee's investigative research, the Mississippi Virtual Community College was created with first class occurring in spring 2000.

### **State Policy and Transfer**

Despite the value of a college degree, only 27.9% of the population in the United States has graduated from college with a bachelor's degree or more (Ryan & Siebens, 2012). The community college–baccalaureate transfer function is one of the most important state policy issues in higher education because its success (or failure) is critical to many factors of state higher education performance, including access, equity, affordability, cost effectiveness, degree productivity, and quality (Wellman, 2002).

Relatively little research on the relationship between state policy and the effectiveness of the 2-year to 4-year transfer function has been done. Four relevant studies are described.

Wellman (2002) conducted an intensive study in which six states were selected based upon the states' grades on retention and degree completion from the National Center for Public Policy and Higher Education (2000) *Measuring Up 2000*, the state-by-state report card for higher education. Florida, New York, and North Carolina were the three selected high performing states, and Arkansas, New Mexico, and Texas were the

three selected low performing states. The six-state survey compared Integrated Postsecondary Education Data System data for first-time freshmen in degree-producing institutions in fall 1991 with baccalaureate degree recipients in 1996–97. The comparisons showed how the states differed in the relative diversity of enrollments and in degree attainment by racial and ethnic groups. White students persisted to the baccalaureate degree at higher rates than either African-American or Hispanic students. Wellman categorized each of the six states' findings from governance, enrollment planning, academic policies affecting transfer to data collection, and accountability. Conclusions were that state policy made a difference in the effectiveness of statewide 2-year to 4-year performance. States that had a comprehensive, integrated approach to transfer policy did better than those that focused primarily on transfer as an academic and institutional matter. Many of the states have made great strides to strengthen their statewide transfer policies in the last few years, and these steps may improve transfer performance in the years ahead. However, states that focus only on academic policy are unlikely to energize the 2-year to 4-year transfer. To focus on statewide performance as well as accountability, the states need policies that relate funding and accountability to academic strategies. The comparative analysis of this study suggested that policy makers benefit from an additional look at what is known about student flow and performance. No state of the six was using all the tools available, such as student aid, setting goals, and rewarding transfer performance, to stimulate transfer performance. Based upon the findings, the following eight recommendations were given by Wellman to help states energize the 2-year to 4-year performance: (a) develop baseline information on statewide transfer performance, including retention and graduation of transfer students; (b) clarify

state policy and plans for the 2-year to 4-year transfer and set goals and measures for the 2-year to 4-year transfer performance; (c) identify and invest in core resources for transfer; (d) perform statewide transfer policy audits; (e) forge articulation and credit transfer agreements; (f) focus on low-performing institutions; (g) use financial aid as a tool to promote 2-year to 4-year transfer; and (h) include private institutions in transfer planning and performance accountability (pp. 45-48).

Hunger and Lieberman (2001) conducted a national study initiated by the Ford Foundation to examine the policies affecting community college transfer. State policy structures affecting transfer in case studies of seven states (California, Florida, Michigan, New York, Texas, Virginia, and Washington) were reviewed. Common patterns were found, but there was little evidence linked to obstacles that students faced in persisting through the attainment of the baccalaureate degree. Hunger and Lieberman argued that student aid should be a factor used to help remove obstacles that prevent students from attaining baccalaureate degrees.

The Education Commission of the States surveyed all 50 states in order to identify different ways that states define policies for the 2-year to 4-year transfer (Education Commission of the States, 2001). Seven criteria were used to examine and describe state programs as follows: (a) legislation; (b) cooperative agreements; (c) transfer data reporting; (d) incentives and rewards offered to encourage the transfer of students; (e) statewide articulation guides available to students, which describe the requirements for transfer; (f) common core courses among different institutions within the state; and (g) common course numbering to aid in reducing non-transferrable credits (pp. 2-5). Findings were that 30 states had legislation on transfer, 40 states had cooperative

agreements in place, 33 states reported transfer data, 18 states offered transfer incentives and rewards, 26 states offered statewide articulation guides, 23 states had a common core curricula to facilitate transfer, and 8 states had a common course numbering system.

In a study commissioned by the Ford Foundation, Orfield and Paul (1992) examined the relationship between state structures for higher education and baccalaureate completion rates. The study examined the demographic characteristics of high school graduates from 1980–1982 who attended post-secondary institutions and the relationship between student characteristics and the choice of post-secondary institutions. Five states (California, Florida, Illinois, Indiana, and Wisconsin) were then reviewed as case studies. The study examined college attendance patterns and baccalaureate completion rates in each of these states between 1975 and 1988. Findings indicated that states with greater commitment to community colleges have lower levels of baccalaureate completion and that neither higher state expenditures per student nor lower tuition increased completion rates.

### **Articulation**

Articulation is described as a formal collaborative agreement between education institutions that enables a student to complete a program of study at one institution and, using accumulated credits, attain a degree at another institution in a shorter period of time. (DeMott, 1999; Menacker, 1975). Historically, articulation between community colleges and 4-year institutions had been a voluntary endeavor (Roksa & Keith, 2008). Prior to the 1980s, the number and types of credits accepted toward a baccalaureate degree at 4-year institutions would be negotiated either as individual institutions or some portions of the state systems. However, as the decades passed, the states became more



involved in the articulation process (Bender, 1990; Knoell, 1990). Kintzer provided one of the first analyses of articulation endeavors (Kintzer, 1973; Kintzer & Wattenbarger, 1985). In the researcher's study, three types of articulation agreements were identified: (a) formal and legally based policies, (b) state system policies, and (c) voluntary agreements between individual institutions or systems.

Although description of state involvement in articulation between 2-year and 4-year public institutions abound, relatively few studies examined whether the state efforts were effective (Roksa & Keith, 2008). A major challenge to accomplish this task was a lack of available data. In the absence of longitudinal state data before and after policy implementation, researchers examined variation in articulation policies across states. The following studies have attempted to understand the relationship between articulation policies and transfer rates.

Anderson, Sun, and Alfonso (2006) used the Beginning Postsecondary Students (1989–1994) data to estimate community college students' probability of transfer to 4-year institutions. The researchers found no effects of articulation policies on transfer. Students attending community colleges in states with articulation policies were no more likely to transfer than students in states without articulation policies.

Utilizing the Transfer Assembly Project, which is the longest-standing study focused on statewide measures of community college baccalaureate transfer, Banks (1994) studied 78 colleges in 15 states with a range of institutional characteristics being controlled. The researchers' findings were that institutions with formalized statewide articulation policies had significantly higher transfer rates.

Roksa and Keith's (2008) study integrated the language of the state-legislative articulation policies with a subsequent examination of their impact on students' credit hours, time to degree, and attainment of bachelor's degrees. In their findings, articulation policies were designed to preserve credits as students moved from 2-year to 4-year institutions. The policy's intention was not to persuade students to transfer but to assist the transition of students who had already decided to transfer. The study was in two stages. The researchers first read statutes for all 50 states and identified the 30 states that had provisions regarding articulation and transfer between community colleges and public 4-year institutions. The second stage used the post-secondary transcript data National Education Longitudinal Study (NELS). The sample of this study included students who entered community colleges within 2 years of high school graduation and subsequently transferred to an in-state public 4-year institution. Among these, 36% of the community college students transferred to 4-year institutions ( $n = 935$ ), and 71% of those students made the transition to an in-state public institution ( $n = 668$ ). The researchers concluded that articulation policies did not appear to enhance baccalaureate degree attainment in the public sector. The researchers proposed that future studies examine three related outcomes: (a) number of credits transferred, (b) time to a bachelor's degree, and (c) completion of a bachelor's degree.

Kisker's (2007) qualitative study drew on the knowledge and experiences of administrators as well as faculty involved in a one-community college university transfer partnership to gain an understanding of the process and the utilization of the transfer partnerships. Kisker noted that the majority of the literature on transfer partnerships had focused more on articulation agreements than active, collaborative partnerships between

institutions. A qualitative case study analysis of a transfer partnership between a large public research university and three of the nine community colleges in southern California was done. Interview questions were provided, and after each interview, the experience and observations were recorded, along with questions, reactions, and potential biases, in a field journal. Kisker found that several findings emerged in creating and sustaining community-university transfer partnerships, including the importance of previous relationships between institutions, the significance of presidential support for partnership practices, the need for adequate and sustained funding, and the importance of maintaining a university presence on community college campuses. Another important finding was the relationship between transfer partnerships and faculty involvement in transfer efforts. As the interview participants noted, involving faculty was the key to promoting a culture of transfer on community college campuses. By instituting and publicizing transfer partnership, especially those that included the state, university, and community college, the community colleges became the central agency ensuring students a seamless transition as an important path to the baccalaureate.

### **Transfer Persistence to Baccalaureate Attainment**

Long and Kurlaender (2009) acknowledged that the viability of the community college transfer function had long been a source of debate. Their study used a longitudinal, administrative set of students in the Ohio public education system in which tracking students across schools as well as obtaining post-secondary degree attainment information was possible. The researchers examined student outcomes such as baccalaureate degree attainment after 4, 6, and 9 years along with total credit hours and stop-out behavior of the last college the student was enrolled. The researchers focused on

first-time freshmen aged 17 to 20 years who began their post-secondary studies during the fall of 1998 and followed them for 9 years until spring 2007. With the focus being on baccalaureate completion, researchers limited the sample to individuals who demonstrated intent to complete a 4-year degree on their college applications either beginning at the 2-year college or 4-year college. In the fall of 1998, 60% of the first-time community college students indicated intent to obtain bachelor's degrees or transfer to a 4-year institution with or without an associate's degree. Among the 7,388 students who began at 2-year colleges, nearly 44% had dropped out after 6 years compared with 34% who started at non-selective 4-year institutions and 18% who started at selective 4-year institutions. The rates of departure were consistently higher for those who started at community colleges compared with 4-year colleges. The study showed great differences in bachelor's degree attainment between those who started at 2-year colleges and those who began at 4-year colleges. Only 26% of the community college transfer students obtained baccalaureate degrees within 9 years of starting compared to 50% of the students who began at non-selective 4-year colleges and 73% who began at selective 4-year colleges. The overall conclusion was that students who initially began at community colleges were at a conservative estimate of 14.5% less likely to complete baccalaureate degrees within 9 years than the students who entered 4-year colleges. The researchers recommended that greater focus be warranted on institutional policies and programs that supported community college students in order to help them transfer to 4-year institutions to reach their outcome of attaining baccalaureate degrees.

Nutting (2011) examined whether community college transfer students had higher baccalaureate rates when they enrolled in 4-year colleges and departments that had larger

shares of transfer students. The study used group data from the State of University of New York (SUNY) consisting of 64 campuses with 89,989 four-term transfers and 84,797 native university students. The study analyzed first-time college students in a fall semester from 1990 to 1996 that were followed through the spring 2002 semester. From this group, the study analyzed rising juniors who were students beginning the first semester of their junior year at a university center, university college, or baccalaureate-granting college of technology. Rising juniors were divided into four groups based upon transfer status. The largest group consisted of native rising juniors who had never attended a community college. The three other groups consisted of transfer with a “four-term” transfer having spent four semesters at a community college before transferring, followed by “early” transfers who spent one to three semesters at a community college before transferring, and “down-and-up” transfers who first enrolled at 4-year colleges and then transferred to community colleges and then back to 4-year colleges before achieving rising junior status. The findings of this study were that conditional on campus quality, community college transfer students who attended non-technical 4-year colleges with higher shares of transfer students had significantly higher 8-year baccalaureate rates. The positive relationship appeared to especially influence transfers who had not declared majors upon their enrollment in 4-year colleges. Department level estimations illustrated that conditional on campus and field of study, transfer students in departments with large shares of transfer students had significantly lower rates of baccalaureate degree attainment even though native students in the same departments did not have lower graduations rates than other natives. Within-department increases in transfer student presence were positively correlated with transfer 8-year graduation rates and negatively

correlated with native 8-year graduation rates, indicating an opportunity for efficiency gains if masses of transfers were separated from natives. The findings of this study suggested opportunities for further research regarding performance of community college transfer students at 4-year colleges. Future studies could determine whether transfer-heavy public campuses in states other than New York have higher graduation rates for transfers.

Berkner, He, and Cataldi (2002) noted in their study that many students who began at a 2-year college seeking baccalaureate degrees never transferred. Their study was based upon 1996–2001 Beginning Postsecondary Students Longitudinal Study, a survey that provided data about a nationally representative sample of students first interviewed in 1996 at the end of their first year in post-secondary education. Forty-six percent of the students had enrolled in public 2-year community colleges. Over the 6 years covered in the study, 40% of the students who began in 1995–1996 were also enrolled in at least one post-secondary institution other than the institution at which they started. Three-fourths of the beginners at public 2-year community colleges completed either a baccalaureate or associate's degree within a 6-year time frame with 23% completing an associate's degree and 13% completing a baccalaureate degree. Among those who transferred to a 4-year institution, 36% attained a baccalaureate degree within 6 years of starting at a community college. The characteristics of students who were most likely to complete a degree within 4 years fit the common perception of college students: being well-prepared academically, entering college immediately after high school, enrolling full time, and staying enrolled continuously.

Glass, Jr. and Harrington (2002) focused on the academic performance, such as GPA, the degree of decline in GPA, transfer shock, and retention and graduation rates, of the community college transfer students and the native students from the class of 1998 and 1999. The sample consisted of 100 community college transfer students from the North Carolina Community Colleges and 100 native students from College of Arts and Sciences who enrolled in one large 4-year university in the University of North Carolina system. The study found that students who transferred from the North Carolina Community Colleges had equal or better performance than the native students at the end of their lower division work (sophomore year). Transfer students experienced transfer shock after the first semester in their major area of study, whereas native students showed no significant decline in GPA after their first semester in their major. However, transfer students recovered from transfer shock. Retention rates for both transfer and native students showed a decline over time as the students moved toward graduation. For this study, it was not clear whether transfer students or native students had higher graduation rates at the end of the senior year. For the class of 1998, the native students had a significantly higher graduation rate of 72% compared to 46% of the transfer students who graduated. For the class of 1999, 30% of the transfer students graduated compared to 40% of the native students, which was not a significant difference in these groups. One of the recommendations for further research was for other 4-year institutions to determine if there were truly differences between transfer and native students in graduation rates and what factors contributed to a difference or similarity regarding graduation rates.

Wang (2009) focused on community college transfers and the unique factors that predicted educational outcomes. Using the National Education Longitudinal Study of

1988 and Postsecondary Education Transcript Study, this research tested logic regression models to predict baccalaureate attainment and college persistence among high school graduates of 1992 who attended community colleges first and eventually transferred to 4-year colleges. The data set consisted of 786 cases. The findings indicated that the probability of attaining a baccalaureate degree among the community college transfer students was significantly associated with gender, socioeconomic status, high school curriculum, educational expectation upon entering college, GPA earned from community college, college involvement, and math remediation. Perceived locus of control and community college GPA were significant predictors of persistence. While the proposed conceptual model predicted baccalaureate attainment reasonably well, an expanded and improved model needs to be developed to study transfer student persistence in future research.

Falconetti (2009) examined continuing viability of Florida's 2+2 articulation agreement by comparing academic success and persistence among 1,738 of Florida's community college graduate transfers and 874 native juniors at three Florida universities. Findings were that transfer students graduated with fewer lower level courses in upper division and fewer cumulative credit hours than native students. However, there was not a significant difference in the final GPAs of student graduates, which indicated that community college transfer students performed just as well academically as native students. There was a greater percentage of transfers that dropped out prior to graduation. Hence, the findings supported the conclusion that community college transfers were academically competitive, but they may benefit from retention services and programs that incorporated student engagement.



## **Summary**

This chapter provided the review of literature. The research questions and the theoretical and conceptual frameworks, along with the discussion of Dougherty's (1992) three stages regarding the baccalaureate degree attainment process, guided the literature review. Attention was given to the overview of community college and its change in mission along with the history of Mississippi's community and junior colleges, the effectiveness of state policy regarding the community college baccalaureate transfer function, the relationship of articulation to attainment of baccalaureate degree, and transfer persistence to baccalaureate attainment.

Key findings from the literature review included the following: (a) community colleges have the largest population of post-secondary attendees being a gateway to the road toward the baccalaureate degree; (b) a majority of the studies found that community college students graduate at a lower rate than native students; and (c) there is relatively little research on the relationship between state policy and the effectiveness of the 2-year to 4-year transfer articulation process.

### CHAPTER III

#### RESEARCH DESIGN AND METHODOLOGY

The purpose of this study was to investigate selected variables among community college transfer students with or without associate's degrees and native students at a 4-year university to determine the impact of the articulation and transfer process on baccalaureate attainment. More specifically, the study examined the differences in demographic characteristics and graduation rates among 15 community colleges and a rural land-grant university in the state of Mississippi. There were three groups reviewed: (a) community college transfer students with associate's degrees and their graduation rate at the 4-year university, (b) community college transfer students without associate's degrees (non-degrees) but having at least 60 hours and their graduation rate at the 4-year university, and (c) the native university students as freshmen and their rate of graduation at the 4-year university. Comparisons were made among the three groups to determine if significant differences existed in the demographic characteristics and academic preparation for baccalaureate attainment.

This chapter presents the research design, variables, and research questions used for this study.

## **Research Design**

Creswell (2009) defined research designs as “plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis” (p. 3). The research design for this study was causal-comparison since three pre-existing groups were explored on a dependent outcome variable of baccalaureate degree attainment. The research questions for this study required the collection and analysis of demographic characteristics, graduation data, and academic preparation.

## **Research Questions**

This study was guided by five primary research questions. The research questions provided the foundation for the outline of this study, data collection, data analysis, findings, and conclusions. The questions were as follows:

1. What are the demographic characteristics and academic preparation of the associate’s degree community college transfer students and non-degree community college transfer students having at least 60 hours who enrolled at the junior level status in fall 2006 at a rural land-grant university in Mississippi?
2. What are the demographic characteristics and academic preparation of the native students who enrolled as freshmen in fall 2004 at a rural land-grant university in Mississippi?
3. Do community college students with associate’s degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?

4. Do community college students without associate's degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?
5. Do demographic characteristics and academic preparation predict graduation for the associate of arts degree, non-degree community college transfer, and native students?

### **Variables**

The researcher gathered data on demographic variables as well as academic preparation variables and the dependent outcome variable of baccalaureate degree attainment as described in the conceptual framework in Chapter 1. Table 2 lists the variables and descriptors that were used for this study.

Demographics, academic preparation, and baccalaureate degree attainment data were collected from the student records maintained in a land-grant university administrative software system known as BANNER. This study included the following demographic independent variables: age, gender, race, community college, and program of study along with the academic preparation independent variables being transfer cumulative GPA, transferred hours earned, cumulative overall GPA, and cumulative credit hours earned. The dependent outcome variable was baccalaureate degree attainment.

Table 2

*Demographics, Academic Performance, and Baccalaureate Attainment Variables*

Variables	Descriptions
Demographic independent variables	
Age	Age at matriculation to the 4-year university
Gender	Male= M Female=F
Race	Other=1,2,4 Black or African American=3 White=5
Independent Variables (Academic Preparation)	
Transfer Cumulative GPA	0.00-4.00
Transferred Hours Earned	000.000-999.999
Cumulative Overall GPA	0.00-4.00
Cumulative Credit Hours Earned	000.000-999.999
Community College	1-15
College (Substituted for Program of Study)	1-8
Dependent Variable	
Baccalaureate Attainment	Yes=Y No=N

**Data Collection**

The researcher utilized primary sources of data from a major high-level research land-grant university in the southeast. Primary data population was collected for the native university students who enrolled in the fall 2004 and community college transfer students who were awarded an associate's degree and admitted into the rural land-grant university in the fall 2006 as a rising junior status along with non-degree community college transfer students who accumulated at least 60 hours and were admitted into the

rural land-grant university in the fall 2006 as a rising junior status. Permission to conduct the study was obtained from the Director of Institutional Research and Effectiveness at Mississippi State University. A copy of the letter requesting permission to conduct the study is included. Institutional Review Board (IRB) permission from Mississippi State University was requested for approval in order to conduct this study. A copy of the Mississippi State University IRB letter is included.

### **Data Analysis**

Data were analyzed using SPSS version 22. Descriptive statistics were used to analyze the demographic data for research questions one and two, chi-square test of independence was used to answer research questions three and four, and logistic regression was used for research question five. The dependent variable in the logistic regression consisted of graduation status with coding being 1=Yes and 0=No. The researcher categorized each program of study represented to the colleges within the rural land-grant university based upon the university's undergraduate bulletin. Due to 73 programs of study being represented with a small sample size in many of them, this variable was not used but was replaced by a college variable. The programs of study were represented by the following eight colleges coded as follows: 1=Business; 2= Agriculture and Life Sciences; 3= Architecture, Arts, and Design; 4= Arts and Sciences 5=Academic Affairs, which includes undeclared program of study; 6= Education; 7= Engineering; and 8=Forest Resources. Race was coded as White =1; Black or African American=2; and Other =3, and gender was coded as M=Male and F=Female. The community colleges coding descriptions were as follows: 1=Coahoma Community College; 2=Copiah Lincoln Community College; 3=East Central Community College; 4=East Mississippi

Community College; 5=Hinds Community College; 6=Holmes Community College; 7=Itawamba Community College; 8=Jones Junior College; 9=Meridian Community College; 10=Mississippi Delta Community College; 11=Mississippi Gulf Coast Community College; 12=Northeast Mississippi Community College; 13=Northwest Community College; 14=Pearl River Community College, and 15=Southwest Community College. All of the community colleges were represented in this study except Coahoma Community College which was the only community college that did not have students to matriculate to the 4-year university in the fall 2006 term. Hence, the independent variables used for the logistic regression consisted of age, gender, race, community college, college, transfer cumulative GPA, transfer hours earned, cumulative overall GPA, and cumulative credit hours earned. For the purposes of the logistic regression, the independent variables of gender, race, community college, and college were dummy coded as 0 and 1 indicating the presence or absence of each category.

## CHAPTER IV

### ANALYSIS OF THE DATA

#### **Introduction**

This study focused on factors of demographic characteristics and academic preparation as related to baccalaureate attainment. More specifically, the purpose of this research study was to investigate selected variables among community college transfer students with or without associate's degrees and native students at a 4-year university to determine the impact of the articulation and transfer process on baccalaureate attainment. The study examined the differences in demographic characteristics and graduation rates among 15 community colleges and a rural land-grant university in the state of Mississippi. There were three groups reviewed: (a) community college transfer students with associate's degrees and their graduation rate at the 4-year university, (b) community college transfer students without associate's degrees (non-degrees) and their graduation rate at the 4-year university, and (c) the native university students and their rate of graduation at the 4-year university. A comparison was made among the three groups to determine if significant differences existed in the demographic characteristics and academic preparation for baccalaureate attainment.

The following five research questions guided the study:

1. What are the demographic characteristics and academic preparation of the associate's degree community college transfer students and non-degree



community college transfer students having at least 60 hours who enrolled at the junior level status in fall 2006 at a rural land-grant university in Mississippi?

2. What are the demographic characteristics and academic preparation of the native students who enrolled as freshmen in fall 2004 at a rural land-grant university in Mississippi?
3. Do community college students with associate's degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?
4. Do community college students without associate's degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?
5. Do demographic characteristics and academic preparation predict graduation for the associate of arts degree, non-degree community college transfer, and native students?

This chapter presents the results for each of the questions as well as a description of the sample and descriptive statistics.

Criteria for the selection of the sample for this study included: (a) students being from the largest rural land-grant university in the state of Mississippi; (b) native university students who were full-time first time students and enrolled in fall 2004; (c) transfer students from one of the 15 Mississippi Community Colleges who were awarded associate's degrees; or (d) non-degree community college transfer students who accumulated at least 60 hours and admitted into the rural land-grant university in the fall

2006 as rising junior status. Applying these criteria, the sample consisted of 2,326 students, of which 1,723 were first-time full-time university native students who enrolled beginning in fall 2004, with the remaining sample being 603 community college transfer students who transferred in the fall of 2006 as a rising junior status to a land-grant university. Of the 603 students, 281 community college transfer students had associate's degrees, and 322 non-degree community college transfer students transferred with at least 60 hours.

Data were collected on demographic independent variables such as age, gender, race, community college, and program of study along with academic preparation independent variables being transfer cumulative GPA, transfer hours earned, cumulative overall GPA, and cumulative credit hours earned. Due to 73 programs of study being represented with a small sample size in many of them, this variable was not used but was replaced by a college variable. The researcher categorized each program of study represented to the colleges within the rural land-grant university based upon the university's undergraduate bulletin. The programs of study were represented by the following eight colleges: (a) Academic Affairs, which includes undeclared program of study; (b) Agriculture and Life Sciences; (c) Architecture, Arts, and Design; (d) Arts and Sciences; (e) Business Education; (f) Education; (g) Engineering; and (h) Forest Resources. Of the 15 Mississippi public community colleges, all were represented in this study except Coahoma Community College which was the only community college that did not have students to matriculate to the 4-year university in fall 2006. The dependent outcome variable was baccalaureate degree attainment.

As Table 3 presents descriptive statistics for the sample, the gender category of female and male are equally distributed across the groups who graduated. There were more males who did not graduate in the native group whereas there were more females who did not graduate among the community college transfer students who had associate's degrees. Regarding race, there is a higher tendency for the White students to graduate more readily than the Black students. The Other category of race, which included American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, International, Multiracial, and Unknown, was fairly equal across the groups and graduation status except for the non-degree transfer, which had a lower graduation rate.

Table 4 presents the means and standard deviation for each group of students regarding age and academic preparation variables as in cumulative credit hours earned, cumulative overall GPA, transfer hours earned, and transfer cumulative GPA. As expected, these data indicated that the university native students were younger at matriculation with age being approximately 18. The mean age regarding the community college subgroups was from 22.42 to 24.53. For the cumulative credit hours earned variable, the graduated students in all three groups had more cumulative credit hours earned with range being from 138.83 to 152.15 compared to the non-graduated students with range being from 60.36 to 122.34. For the cumulative overall GPA, the students who graduated in all three groups had a higher cumulative overall GPA with range being from 3.18 to 3.25 than the students who did not graduate with range being from 2.14 to 2.58.

Table 3

*Descriptive Statistics of the Three Groups based upon Gender, Race, and College*

Variable	Native (n=1,723)		AA Transfer (n=281)		Non-Degree Transfer (n=322)	
	Not-Graduated n (%)	Graduated n (%)	Not-Graduated n (%)	Graduated n (%)	Not-Graduated n (%)	Graduated n (%)
GENDER						
Female	336 (44.2%)	486 (50.5%)	55 (67.9%)	101 (50.5%)	45 (50.6%)	112 (48.1%)
Male	424 (55.8%)	477 (49.5%)	26 (32.1%)	99 (49.5%)	44 (49.4%)	121 (51.9%)
RACE						
White	512 (67.4%)	774 (80.4%)	47 (58.0%)	158 (79.0%)	62 (69.7%)	209 (89.7%)
Black	222 (29.2%)	157 (16.3%)	30 (37.0%)	34 (17.0%)	23 (25.8%)	20 (8.6%)
Other	26 (3.4%)	32 (3.3%)	4 (4.9%)	8 (4.0%)	4 (4.5%)	4 (1.7%)
COLLEGE						
Academic Affairs	218 (28.7%)	0 (0.0%)	8 (9.9%)	0 (0.0%)	16 (18.0%)	0 (0.0%)
Agriculture & Life Sciences	49 (6.4%)	89 (9.2%)	6 (7.4%)	14 (7.0%)	8 (9.0%)	16 (6.9%)
Architecture, Art & Design	37 (4.9%)	47 (4.9%)	3 (3.7%)	6 (3.0%)	2 (2.3%)	3 (1.3%)
Arts & Sciences	183 (24.1%)	277 (28.8%)	22 (27.2%)	38 (19.0%)	19 (21.3%)	53 (22.7%)
Business	114 (15.0%)	226 (23.5%)	12 (14.8%)	45 (22.5%)	8 (9.0%)	41 (17.6%)
Education	39 (5.1%)	163 (16.9%)	26 (32.1%)	66 (33.0%)	27 (30.3%)	83 (35.6%)
Engineering	114 (15.0%)	154 (16.0%)	4 (4.9%)	29 (14.5%)	9 (10.1%)	33 (14.2%)
Forest Resources	6 (0.8%)	7 (0.7%)	0 (0.0%)	2 (1.0%)	0 (0.0%)	4 (1.7%)
Total	n=760	n=963	n=81	n=200	n=89	n=233

Table 4

*Means and Standard Deviations of the Three Groups on Age, Credit Hours Earned, and GPA*

Variable	Native		AA Transfer		Non-Degree Transfer	
	Not- Graduated <i>M (SD)</i>	Graduated <i>M (SD)</i>	Not- Graduated <i>M (SD)</i>	Graduated <i>M (SD)</i>	Not- Graduated <i>M (SD)</i>	Graduated <i>M (SD)</i>
Age	18.50 (0.89)	18.38 (0.55)	24.22 (5.50)	22.60 (5.48)	24.53 (7.22)	22.42 (5.01)
Cumulative Credit Hours Earned	60.36 (45.79)	138.83 (15.68)	118.51 (36.72)	152.15 (17.92)	122.34 (32.19)	150.01 (20.54)
Cumulative Overall GPA	2.14 (0.89)	3.20 (0.47)	2.58 (0.52)	3.25 (0.44)	2.53 (0.55)	3.18 (0.46)
*Transferred Hours Earned	-	-	78.09 (17.51)	74.26 (12.14)	79.78 (22.66)	72.30 (17.24)
*Transfer Cumulative GPA	-	-	2.82 (0.52)	3.27 (0.51)	2.74 (0.56)	3.16 (0.53)

\*Transfer hours earned and transfer cumulative GPA are not applicable for the native students in this study.

### Examination of Research Question 1

The first research question of this study was the following: *What are the demographic characteristics and academic preparation of the associate's degree community college transfer students and non-degree community college transfer students having at least 60 hours who enrolled at the junior level status in fall 2006 at a rural land-grant university in Mississippi?* In examining Table 3, of the 281 associate's degree community college transfer students, the majority was female (55.5%,  $n = 156$ ) and White (73.0%,  $n = 205$ ). The College of Education had the most (32.7%,  $n = 92$ ) community college transfer students with associate's degrees enrolled in a program of study.

In reviewing Table 4, the age of students ranged from 18 to 47 with the average age being 23. The mean cumulative credit hours earned was 33.64 more credits for the associate's community college transfer students who graduated with baccalaureate degrees than the associate's degree community college transfer students who did not attain baccalaureate degrees. The cumulative overall GPA was slightly higher for the associate's degree community college transfer students who attained baccalaureate degrees than associate's degree community transfer students who did not. The transfer hours earned were comparable with the mean being 74.26 for the associate's degree community college transfer students who attained baccalaureate degrees versus 78.09 for the associate's degree community college transfer students who did not receive baccalaureate degrees. The transfer cumulative GPA was slightly higher for the associate's degree community college transfer students who attained baccalaureate degrees than the associate's degree community transfer students who did not.

Of the 322 non-degree community college transfer students, there were 165 males (51.2%) and 157 females (48.7%) with 271 (84.2%) being White. The College of Education had the most (34.2%,  $n = 110$ ) non-degree community college transfer students enrolled in a program of study. The age of students ranged from 19 to 57 with the average age being 23 as reflected in Table 4. The mean cumulative credit hours earned was 27.67 more credits for the non-degree community college transfer students who graduated with baccalaureate degrees than for the non-degree community college transfer students who did not attain baccalaureate degrees. The mean cumulative overall GPA was slightly higher for non-degree community college transfer students who attained baccalaureate degrees than non-degree community college transfer students who did not. The transfer

hours earned were comparable with the mean being 72.30 for the non-degree community college students who attained baccalaureate degrees versus 79.78 for the non-degree community college transfer students who did not. The mean transfer cumulative GPA was slightly higher for the non-degree community college transfer students who attained baccalaureate degrees.

### **Examination of Research Question 2**

The second research question was the following: *What are the demographic characteristics and academic preparation of the native students who enrolled as freshmen in fall 2004 at a rural land-grant university in Mississippi?* In examining Table 3, of the 1,723 first-time full-time university native students, there were 901 males (52.3%) and 822 females (47.7%) with the majority (74.6%,  $n = 1,286$ ) being White. College of Arts and Sciences had 26.7% ( $n = 460$ ) of first-time full-time university native students enrolled in a program of study, followed by 19.7% ( $n = 340$ ) in the College of Business. In examining Table 4, the age of students ranged from 18 to 28 with the average age being 18. The mean cumulative credit hours earned was 78.47 more credits for the native students who graduated with baccalaureate degrees than for native students who did not attain baccalaureate degrees. The mean cumulative overall GPA was 1.06 points higher for the native students who graduated with baccalaureate degrees than for the native students who did not graduate.

Table 5 presents all three groups of students and the status of graduation. Overall, community college transfer students with associate's degrees or non-degrees graduated at a higher rate with 71.2% and 72.4% compared to the native students starting as freshmen at 55.9%. This difference in graduation rates is consistent with the claim that articulation

is working between the Mississippi Public Community College System and this rural land-grant university.

*Table 5*

*Degree Attainment Status of the Three Cohorts*

	Native	Associate's Degree Transfer	Non-Degree Transfer
Degree Attainment	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
No	760 (44.1%)	81 (28.8%)	89 (27.6%)
Yes	963 (55.9%)	200 (71.2%)	233 (72.4%)

### **Examination of Research Question 3**

The third research question was the following: *Do community college students who transfer with associate's degrees to a rural land-grant public university graduate at the same rate as the native students?* A chi-square test of independence was computed to examine the relationship of the graduation status for a baccalaureate degree of the community college students who transferred with associate's degrees ( $n = 281$ ) to native students ( $n = 1,723$ ) at a rural land-grant institution. The chi-square test of independence was utilized to determine whether the observed frequency value of student graduation status and student group, i.e. community college transfer and native students, differed significantly from their respective expected frequency values. The variables of the student graduation status and student group were cross tabulated to determine whether the frequencies were distributed in a relative manner. The results of the chi-square test yielded a statistically significant relationship between the variables of the student graduation status and student group,  $X^2 (N = 2004, df = 1) = 23.172, p < .001$ . In Table 5,



community college students who transferred with associate's degrees that had attained baccalaureate degrees represented a larger relative percentage ( $n = 200$ , 71.2%) than the native students who had attained baccalaureate degrees ( $n = 963$ , 55.9%). These data indicate that the community college students who transfer with associate's degrees to a rural land-grant public university graduate at higher rate than the native students starting as freshmen. This difference in graduation rates is consistent with the claim that articulation is working between the Mississippi Public Community College System and this rural land-grant university.

#### **Examination of Research Question 4**

The fourth research question was the following: *Do community college students who transfer without associate's degrees to a rural land-grant public university graduate at the same rate as the native students?* A chi-square test of independence was computed to examine the relationship of the graduation status for a baccalaureate degree of the community college students who transferred without associate's degrees ( $n = 322$ ) to native students ( $n = 1,723$ ) at a rural land-grant institution. The chi-square test of independence was utilized to determine whether the observed frequency value of student graduation status and student group, i.e. community college transfer and native students, differed significantly from their respective expected frequency values. The variables of the student graduation status and student group were cross tabulated to determine whether the frequencies were distributed in a relative manner. The results of the chi-square test yielded a statistically significant relationship between the variables of the student graduation status and student group,  $X^2 (N = 2045, df = 1) = 30.30, p < .001$ . In Table 5, the non-degree community college transfer students who attained baccalaureate degrees

represented a larger relative percentage ( $n = 233$ , 72.4%) than the native students who had attained baccalaureate degrees ( $n = 963$ , 55.9%). These data indicate the community college students who transferred without associate's degrees to a rural land-grant public university graduate at higher rate than the native students starting as freshmen. This difference in graduation rates is consistent with the claim that articulation is working between the Mississippi Public Community College System and this rural land-grant university.

### **Examination of Research Question 5**

The fifth question was the following: *Do demographic characteristics and academic preparation predict graduation for the associate of arts degree, non-degree community college transfer, and the native students?* Demographic characteristics consisting of age, gender, race, and the college along with academic preparation consisting of transfer cumulative GPA, transfer hours earned, cumulative overall GPA, and cumulative credit hours earned were collected from the student records maintained in a land-grant university administrative software system known as BANNER. These data were analyzed using SPSS version 22.0. Logistic regressions were conducted to predict the odds of each group graduating with baccalaureate degrees based upon demographic characteristics and academic preparation variables.

Table 6

*Classification Table for Logistic Regression of Native Students*

Observed Count	Predicted		% Correct
	Graduated (No)	Graduated (Yes)	
Graduated (No)	685	64	91.5%
Graduated (Yes)	12	951	98.8%
Overall %			95.6%

Table 7

*Classification Table for Logistic Regression of Associate Degree Transfers*

Observed Count	Predicted		% Correct
	Graduated (No)	Graduated (Yes)	
Graduated (No)	69	12	85.2%
Graduated (Yes)	7	192	96.5%
Overall %			93.2%

Table 8

*Classification Table for Logistic Regression of Non-Degree Transfers*

Observed Count	Predicted		% Correct
	Graduated (No)	Graduated (Yes)	
Graduated (No)	73	16	82.0%
Graduated (Yes)	6	227	97.4%
Overall %			93.2%

Table 9

*Results of the Logistic Regressions Predicting Graduation of the Three Groups with Variables Statistically Significant at  $p < .001$*

	Native	AA Transfer	Non-Degree Transfer
$R^2$ (Cox & Snell R Square)	0.659	0.563	0.552
Accuracy	95.6%	93.2%	93.2%
Exp(B) Cumulative Overall GPA	45.85	5914.65	742.34
Exp(B) Cumulative Credit Hours Earned	1.09	1.08	1.11
*Exp(B) Transfer Cumulative GPA	-	.009	.020
*Exp(B) Transfer Hours Earned	-	.938	.929

\*Transfer cumulative GPA and transfer hours earned are not applicable for the native students in this study.

In Table 6, of the 1,723 native students, the logistic function predicted 1,636 of the students accurately, a 95.6% prediction rate. In Table 7, the data indicate that of the 281 community college transfer students with associate's degrees, the logistic model predicted 261 of the students accurately, a 93.2% prediction rate. In Table 8, the data indicate that of the 322 non-degree community college transfer students, the logistic model predicted 300 of the students accurately, a 93.2% prediction rate.

In Table 9, the results of the logistic regression for native students yielded a statistically significant relationship between the variables of the student graduation status and academic preparation,  $X^2 (N = 1723, df = 13) = 1842.77, p < .001$ , pseudo- $R^2$  (Cox & Snell) = .659. The results of the logistic regression for the community college transfer students with associate's degrees yielded a statistically significant relationship between

the variables of the student graduation status and academic preparation,  $X^2 (N = 281, df = 27) = 231.77, p < .001$ , pseudo- $R^2$  (Cox & Snell) = .563. The results of the logistic regression for the non-degree community college transfer students yielded a statistically significant relationship between the variables of the student graduation status and academic preparation,  $X^2 (N = 322, df = 28) = 258.72, p < .001$ , pseudo- $R^2$  (Cox & Snell) = .552.

The accuracy of the pseudo- $R^2$  (Cox & Snell R Square) was 9% to 10% higher for the native students than for the community college transfer groups. The Exp(B) for cumulative overall GPA was considerably higher for the two community college transfer groups. The Exp(B) for cumulative credit hours earned was similar across all three groups. Therefore, the Exp(B) for cumulative overall GPA illustrates this variable produces much higher odds of graduating for the two community college transfer groups than the native students. The variables of transfer cumulative GPA and transfer hours earned do not apply for the native students.

The demographic characteristics did not make a significant contribution in the prediction of graduation for any of the three groups whereas the academic preparation did with four of the variables (cumulative credit hours earned, cumulative overall GPA, transfer hours earned, and transfer cumulative GPA).

### **Summary**

Chapter four presented the results of the statistical analysis along with the discussion of the data. The research questions were examined. Regarding the demographics and academic preparation across the three groups, the differences were generally small for gender or race. There was a slight tendency for all three groups'

program of study to be in the College of Education, College of Arts and Sciences, or College of Business. The two groups of community college transfer students seemed to be older in age and by a larger margin than approximately 2 years worth of coursework would account for. The difference in graduation rates is consistent with the claim that articulation is working between the Mississippi Public Community College System and this rural land-grant university. From this study, analysis shows that having an associate's degree makes no difference in attaining a baccalaureate degree. As expected, the cumulative overall GPA and cumulative credit hours earned are higher for those who graduate than those who did not graduate among the three groups. The logistic regressions worked significantly from all three groups with the strongest predictor being the cumulative overall GPA.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is a summation of the research study. The discussion begins with the purpose of the study and a summary of the findings and the conclusions drawn from the study's findings. This chapter also includes limitations, implications, and recommendations for further research. The purpose of this study was to investigate selected variables among community college transfer students with or without associate's degrees and native students at a 4-year university to determine the impact of the articulation and transfer process on baccalaureate attainment. More specifically, the study examined the differences in demographic characteristics, academic preparation, and graduation rates among 14 of the 15 community colleges and one of the two rural land-grant universities in the state of Mississippi. There were three groups reviewed: (a) community college transfer students with associate's degrees and their graduation rate at the 4-year university, (b) community college transfer students without associate's degrees (non-degrees) and their graduation rate at the 4-year university, and (c) native university students and their rate of graduation at the 4-year university. A comparison was made among the three groups to determine if significant differences existed in the demographic characteristics and academic preparation for baccalaureate attainment.

The researcher utilized primary sources of data from a major high-level research land-grant university in the southeast and entered findings into Excel and analyzed

findings using SPSS version 22.0. Demographics, academic preparation, and baccalaureate degree attainment data were collected from the student records maintained in the university's administrative software system known as BANNER. This study included the following demographic independent variables: age, gender, race, and college/program of study along with academic preparation independent variables transfer cumulative GPA, transferred hours earned, cumulative overall GPA, and cumulative credit hours earned. The dependent outcome variable was baccalaureate degree attainment. Primary data population was collected for the native university student who enrolled in the fall 2004 as well as the community college transfer student who was awarded an associate's degree and admitted into the rural land-grant university in fall 2006 as a rising junior status along with non-degree community college transfer students who accumulated at least 60 hours and were admitted into the land-grant university in fall 2006 as a rising junior status. For this study, graduation rate was defined as a student who completed a degree at the end of a time frame of 6 years, excluding drop-out or stop-out students. The following five research questions were used to guide this study:

1. What are the demographic characteristics and academic preparation of the associate's degree community college transfer students and non-degree community college transfer students having at least 60 hours who enrolled at the junior level status in fall 2006 at a rural land-grant university in Mississippi?
2. What are the demographic characteristics and academic preparation of the native students who enrolled as freshmen in fall 2004 at a rural land-grant university in Mississippi?



3. Do community college students with associate's degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?
4. Do community college students without associate's degrees who transfer to a rural land-grant public university graduate at the same rate as the native students?
5. Do demographic characteristics and academic preparation predict graduation for the associate of arts degree, non-degree community college transfer, and native students?

### **Summary of Findings and Conclusions**

The introduction, review of literature, research design and methodology, and results for this study were presented in chapters one through four. Brief summaries of the chapters follow.

Chapter one included the statement of the problem, purpose of the study, definition of terms, research questions, research design and methodology, delimitations, and significance of study. In addition, the conceptual and theoretical frameworks were presented. This study was to increase the level of knowledge about the impact of the articulation process among the community college system and the university system. Higher education leaders, faculty, researchers, and policy makers can use these findings from this study to create conditions to obtain higher baccalaureate degree attainment among the community college transfer students and the native university students. This study affirms that the articulation process is functioning. As an example, in this study of community college transfer students who matriculated 60 hours or more, seven out of ten

attained their baccalaureate degree. Therefore, recruiting transfer students should be as important as recruiting freshmen.

Chapter two provided the review of literature. The research questions and the theoretical and conceptual frameworks, along with the discussion of Dougherty's (1992) three stages regarding the baccalaureate degree attainment process, guided the literature review. Attention was given to the overview of community college and its change in mission along with the history of Mississippi's community and junior colleges, the effectiveness of state policy regarding the community college baccalaureate transfer function, the relationship of articulation to attainment of baccalaureate degree, and transfer persistence to baccalaureate attainment.

Chapter three presented the research design and methodology used for the study. This study utilized the causal-comparative research design. This chapter also included the research questions, variables, data collection, and the analysis procedures utilized for the study.

Chapter four presented the results of the statistical analysis along with the discussion of the data. For demographic research questions one and two, descriptive statistics were used with findings being provided. For research questions three and four, the chi-square test of independence was used to analyze the data, and findings were provided. For research question five, a logistic regression analysis for each of the three groups of students was performed, and findings were provided.

The following provided the findings and conclusions for each research question in this study. Research question 1 was the following: *What are the demographic characteristics and academic preparation of the associate's degree community college*

*transfer students and non-degree community college transfer students having at least 60 hours who enrolled at the junior level status in fall 2006 at a rural land-grant university in Mississippi?* The researcher found that the demographic characteristics across the two transfer groups did not have a significant difference in gender; however, regarding race, there was a higher tendency for the White students to graduate than either the Black students or the Other category of race. This was consistent with Wellman's (2002) conclusion that White students persist to baccalaureate degrees at higher rates than Black or Hispanic students. The two transfer groups seemed to be older in age than natives, which was expected from the study. However, there was a slight tendency for both transfer groups' program of study to be in the College of Education. As expected, the cumulative credit hours earned were greater for both transfer groups that graduated with a baccalaureate degree than those that did not attain a baccalaureate degree. As expected, the cumulative overall GPA was higher for both transfer groups that graduated with baccalaureate degrees than those that did not attain baccalaureate degrees. The transfer earned hours for both transfer groups that graduated with baccalaureate degrees were comparable to those that did not attain baccalaureate degrees. As expected, the transfer cumulative GPA was higher for both transfer groups that graduated with baccalaureate degrees than those that did not attain baccalaureate degrees.

Research question 2 was the following: *What are the demographic characteristics and academic preparation of the native students as freshmen who enrolled in fall 2004 at a rural land-grant university in Mississippi?* The researcher found that the demographic characteristics of the native students did not have a significant difference in gender; however, regarding race, there was a higher tendency for the White students to graduate

than either the Black students or the Other category of race. This was consistent with Wellman's (2002) conclusion that White students persist to baccalaureate degrees at higher rates than Black or Hispanic students. The native students were younger in age, which was expected from the study. However, there was a slight tendency for native students' program of study to be in the College of Arts and Sciences followed by College of Business. The cumulative credit hours earned were much higher for the native students who graduated with baccalaureate degrees than those who did not attain baccalaureate degrees. The cumulative overall GPA was higher for the native students who graduated with baccalaureate degrees than the native students who did not attain baccalaureate degrees.

Research question 3 was the following: *Do community college students who transfer with an associate's degree to a rural land-grant public university graduate at the same rate as the native students?* The total sample of the community college students who transferred with associate's degrees that had attained baccalaureate degrees represented a larger relative percentage (71.2%) than the native students who had attained baccalaureate degrees (55.9%). These data indicate that community college students who transfer with associate's degrees to a rural land-grant university graduate at a higher rate than the native students, who entered as freshmen. Hence, community colleges are an important, if not the primary, contributor to meeting the *American Graduation Initiative* (Kotamraju, 2011). Additionally, the difference in graduation rates is consistent with the claim that articulation is working between the Mississippi Public Community College System and this rural land-grant university. This was consistent with the study of Banks (1994) that showed institutions with formalized statewide articulation policies have

significantly higher transfer rates among community college students. This is unlike the results of Roksa and Keith (2008) who concluded students who initially began at community colleges were at a conservative estimate of 14.5% less likely to complete baccalaureate degrees within 9 years than the students who entered 4-year colleges. In this study, community college transfer students were tracked from the time of matriculation into the 4-year college.

Research question 4 was the following: *Do community college students who transfer without associate's degrees to a rural land-grant public university graduate at the same rate as the native student?* The total sample of non-degree community college transfer students who attained baccalaureate degrees represented a larger percentage (72.4%) than the native students who attained baccalaureate degrees (55.9%). These data indicate that the non-degree community college transfer students graduate at a higher rate than the native students at a rural land-grant university. Hence, community colleges are an important, if not the primary, contributor to meeting the *American Graduation Initiative* (Kotamraju, 2011). Additionally, the difference in graduation rates is consistent with the claim that articulation is working between the Mississippi Public Community College System and this rural land-grant university. This was consistent with the study of Banks (1994) that showed institutions with formalized statewide articulation policies have significantly higher transfer rates among community college students. This is unlike the study of Roksa and Keith (2008) that concluded students who initially began at community colleges were at a conservative estimate of 14.5% less likely to complete baccalaureate degrees within 9 years than the students who entered 4-year colleges. In

this study, community college transfer students were tracked from the time of matriculation into the 4-year college.

Research question 5 was the following: *Do demographic characteristics and academic preparation predict graduation for the associate of arts degree, non-degree community college transfer, and the native student?* Logistic regressions were conducted to predict the odds of each group graduating with a baccalaureate degree based upon the selected demographic characteristics and academic preparation variables. The logistic model predicted graduation status with 95.6% accuracy for the native students. The logistic model predicted graduation status with 93.2% accuracy for the community college transfer students with associate's degrees and the final model yielded 93.2% accuracy for the non-degree community college transfer students on baccalaureate degree attainment. All three logistic regression models yielded a statistically significant relationship between the graduation status and academic preparation variables. However, the accuracy of model predictions was 9% to 10% higher for the native students than for the community college transfer groups. The importance of cumulative overall GPA for predicting graduation status was considerably higher for the two community college transfer groups. The cumulative credit hours earned was similar across all three groups. Therefore, an increase in the cumulative overall GPA yields much higher odds of graduating for the two community college transfer groups than the native students. The transfer cumulative GPA and transfer hours earned do not apply for the native students. The demographic characteristics did not make a significant contribution in the prediction of graduation for any of the three groups whereas the academic preparation did with four of the variables (cumulative credit hours earned, cumulative overall GPA, transfer hours

earned, and transfer cumulative GPA). The strongest predictor for this study regarding graduation of any of the three groups was cumulative overall GPA. Therefore, for transfer students, having the associate's degrees do not seem to make a great difference in the attainment of baccalaureate degrees for this study.

### **Limitations of the Study**

The delimitations of the study posed certain restrictions. This study only investigated selected variables of three groups of students, two of which pertain to Mississippi community college transfer students who have associate's degrees or non-degrees with an accumulation of at least 60 hours transfer work who matriculated at the rural land-grant university in Mississippi in fall 2006. The third group was limited to full-time first-year native university students who were admitted in fall 2004. Hence, one of the limitations is the students chosen meet the requirements of the appropriate group definition. Another limitation was the assumption that the data entered into the BANNER administrative system database were entered accurately. Hence, if this assumption is not true, different results might have been discovered. Any generalization was limited by investigating only those community college students and native university students enrolled at the time of the study at one rural Mississippi land-grant university.

### **Implications and Recommendations for Future Research**

The researcher found that community college transfer students having at least 60 hours, with or without associate's degrees graduate at higher rate than the native students admitted as freshmen. It appears that the articulation between the Mississippi Public Community College System and the rural land-grant university is functioning and should

be continued. One implication is there appears to be no advantage in possessing the associate's degree in order to attain a baccalaureate degree. Other universities within the state and beyond may want to review this study and determine the accuracy of prediction regarding baccalaureate degree attainment based upon demographic characteristics and academic preparation among the three groups. The full-time first-time native students graduated at least 15.3% lower than either of the community college transfer groups. Another implication is that a better continual academic advising system is needed at this rural land-grant university regarding recommendations for practice and policy. Future researchers should conduct studies that relate to further research to investigate institutional practices with the desired effect of increasing transfer and, most importantly, baccalaureate attainment with the following recommendations:

1. While this study included transfer students from 14 of the 15 public community colleges at one rural land-grant university in Mississippi, a statewide study including all eight public universities would help confirm the results in light of the intention of Mississippi House Bill 488 and Mississippi House Bill 1071 concerning graduation rates and degree attainment.
2. For this study, graduation rate was defined as a student who had completed a degree at the end of a time frame of 6 years from fall 2004. Graduate Rate 200 became a new survey component to the Integrated Postsecondary Education Data System in 2008 due to the Higher Education Opportunity Act of 2008. A new study is recommended that defines graduation rate being the total number of completers within 200%



instead of 150% of the normal time to graduate. This time frame corresponds to completing a bachelor's degree in 8 years instead of 6 years and the relationship to demographic characteristics and academic preparation predicting baccalaureate degree attainment.

3. Additional studies should be conducted to include socioeconomic variables. Townsend and Wilson (2006) noted that starting at a 4-year college may not be an option for some students because of escalating tuition costs and students' family or job responsibilities.
4. Future research could include qualitative studies on community college transfer students who attained baccalaureate degrees at the rural land-grant university versus the community college transfer students who did not attain baccalaureate degrees.
5. Future researchers should further explore the effect of the program of study since this study did not have sufficient numbers to examine the effect of this variable to attain a baccalaureate degree.
6. Future researchers should further explore the effect that each of the Mississippi public community colleges has by looking at the graduation outcomes for the individual community colleges.
7. Future research could also compare a cohort of native rising juniors instead of freshmen with community college transfer students with or without an associate's degree having at least 60 hours or more.

## **Summary**

Chapter five summarized the research study findings and provided conclusions. Each of the five research questions was examined in more detail. The overall findings indicate that the community college transfer students with or without associate's degrees graduate at a higher rate than native students starting as freshmen. There appears to be no advantage in community college transfer students possessing associate's degrees to attain baccalaureate degrees. The study findings were compared to other research studies. Limitations of the study and recommendations for policy and practice as well as future research were presented.

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APPENDIX A  
OFFICE OF INSTITUTIONAL RESEARCH & EFFECTIVENESS PERMISSION  
LETTER



MISSISSIPPI STATE  
UNIVERSITY™

*Office of Institutional Research and Effectiveness*

November 12, 2012

Reference:

Susan M. Johnson, Community College Leadership Doctoral Student

To Institutional Review Board:

The Office of Institutional Research and Effectiveness is granting permission and providing data to Susan M. Johnson in order for her to comply with doctoral degree requirements at Mississippi State University. Student enrollment/graduation data is not available publicly, but the dataset is being provided to Mrs. Johnson for her research efforts in conjunction with her doctoral dissertation.

Any and all identifying data elements will be removed from the data set provided to Mrs. Johnson from the Office of Institutional Research and Effectiveness.

Sincerely,

Tim Chamblee, PhD  
Director

P.O. Box EY • Mississippi State, MS 39762 • (662) 325-3920 • Fax: (662) 325-3514

APPENDIX B  
INSTITUTIONAL REVIEW BOARD APPROVAL

November 28, 2012  
Susan Mitzy Johnson  
Leadership & Foundations  
Mailstop 9698

RE: IRB Study #12-403: Degree Attainment of Students from a Land-Grant University who matriculated from the Mississippi Public

Dear Ms. Johnson:

This email serves as official documentation that the above referenced project was reviewed and approved via administrative review on 11/28/2012 in accordance with 45 CFR 46.101(b)(4). Continuing review is not necessary for this project. However, any modification to the project must be reviewed and approved by the IRB prior to implementation. Any failure to adhere to the approved protocol could result in suspension or termination of your project. The IRB reserves the right, at anytime during the project period, to observe you and the additional researchers on this project.

Please note that the MSU IRB is in the process of seeking accreditation for our human subjects protection program. As a result of these efforts, you will likely notice many changes in the IRB's policies and procedures in the coming months. These changes will be posted online at <http://www.orc.msstate.edu/human/aahrpp.php>.

Please refer to your IRB number (#12-403) when contacting our office regarding this application.

Thank you for your cooperation and good luck to you in conducting this research project. If you have questions or concerns, please contact me at [cwilliams@research.msstate.edu](mailto:cwilliams@research.msstate.edu) or call 662-325-5220. In addition, we would greatly appreciate your feedback on the IRB approval process. Please take a few minutes to complete our survey at <http://www.surveymonkey.com/s/YZC7QQD>.

Sincerely,

Christine Williams, MPPA, CIP  
IRB Compliance Administrator

cc: James E. Davis (advisor)

APPENDIX C  
COLLEGE CROSSWALK TO PROGRAM OF STUDY

## College Crosswalk to Program of Study

### Academic Affairs

Undecided

### Agriculture and Life Sciences

Agricultural Engineering Technology and Business

Agricultural Information Science

Agricultural, Food, and Resource Economics

Agribusiness

Agronomy

Animal and Dairy Science

Biochemistry

Food and Nutrition

Food Science, Nutrition, and Health Promotion

Horticulture

Human Sciences

Integrated Pest Management

Landscape Architecture

Landscape Contracting

Management of Construction and Land

Poultry Science

## Architecture, Art, and Design

Architecture

Art

Interior Design

## Arts and Sciences

Anthropology

Biological Sciences

Chemistry

Communication

Economics

English

Foreign Languages

General Liberal Arts

General Science

Geoscience

History

Interdisciplinary Studies

Mathematics

Medical Technology

Microbiology

Music

Philosophy



### Arts and Sciences

Physics

Political Science

Psychology

Social Work

Sociology

### Business

Accounting

Banking and Finance

Business Information Systems

Business Administration

General Business Administration

Management

Marketing

Real Estate and Mortgage

Risk Management, Insurance, and Financial Planning

### Education

Educational Psychology

Elementary Education

Industrial Technology

Information Technology Services

Instructional Technology

Music Education

Physical Education

Secondary Education

Special Education

Technology Teacher Education

### Engineering

Aerospace Engineering

Biological Engineering

Chemical Engineering

Civil Engineering

Computer Engineering

Computer Science

Electrical Engineering

Industrial Engineering

Mechanical Engineering

Software Engineering

### Forest Resources

Forestry

Wildlife and Fisheries